



NORTH CAROLINA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES

Division of Waste Management

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

Solid Waste Section

March 30, 2015

Mr. Edward Mann
Public Works Director
Dare County
P.O. Box 1000
Manteo, NC 27954

Subject: Comments on Substantial Amendment & Permit To Construct Application for Dare County Construction and Demolition Debris Landfill (C&DLF) - Phase V Permit No. 2803-CDLF-1995, Dare County, North Carolina Document ID No. (DIN) 24056

Dear Mr. Mann:

On March 13, 2015 the Division of Waste Management (DWM), Solid Waste Section (SWS) received the Substantial Amendment Application and Permit to Construct Application for Dare County C&DLF - Phase V (permit application), which is titled:

- *C&D Landfill Substantial Amendment and Phase V Permit to Construct Application, Dare County, North Carolina.* March 13, 2015. Prepared by CDM Smith, Inc. (DIN 23979).

The SWS reviewed the engineering portions of the permit application and has several comments stated below. The SWS Hydrogeologist is conducting a review of the Site Hydrogeologic Report and environmental media monitoring plans in the permit application. Upon completing the review, she or he may issue a separate comment letter to request more information as needed.

Section 3 - Facility Plan

1. (Section 3.3.2) Please clarify the following concerns regarding gross capacity, which should be consistent with data in drawing Sheet No. SD-2:
 - i. Please provide the in-place waste volume in cubic yards (CY) for inactive Phases/Cells I, II, & III.
 - ii. The in-place waste volume and the remaining capacity at active Phase/Cell IV (as of May 29, 2014) and remaining expected service life.
 - iii. Total gross capacity of the C&DLF including all phases - Phases I through IX.

- iv. Total gross capacity in Table 3-2 is likely 2,045,100 CY as concluded in drawing Sheet No. LO-7, not 2,294,900 CY. Please verify the data and make any necessary corrections.
2. (Section 3.3.2.4) The SWS records show that no landfill cell/phase has completed final closure at this C&DLF. Because the proposed Phases V, VI, VII, & IX are landfill cells filled between the existing phases/cells, the closure area for the proposed phase/cell would include the closure phase/cell and the existing phases/cells at either sides of it and the standalone inactive phases. For example, Phase V will be sandwiched by /in- filled between inactive Phases /Cells I & II. When Phase V is subject to closure, the closure area would combine Phase I, II & V and stand-alone Phases 3 & 4 areas (approximately 47.3 acres) as shown drawing Sheet No. LO-2, not the Phase V area alone. Please verify the data of Final Cover Soil Volume for each proposed phase in Tables 3-3 & 3-4.
3. (Sections 3.3.2.5 & 1.3 of the Closure Plan) The waste to cover soil ratio (8 to 1) is not consistent with that (4 to 1) stated in the Closure Plan and previously approved permit applications for Phases/Cells III & V. Please clarify and make necessary corrections.
4. (Table 3-3) Please explain why the soil volume for operations at Phase IX is not available or required.
5. (Section 3.3.3.3.1.1) Please confirm the maximum side slopes of the proposed final cover system of the C&DLF is 25 percent (%) [4 (horizontal) to 1 (vertical)] or 33.33 % [3 (horizontal) to 1 (vertical)] throughout the Permit Application.
6. (Section 3.3.3.3.1.2) Should the existing Erosion and Sediment Control Plan for C&DLF - Phase IV (Cell 4) approved by the NC Land Quality Section (LQS) on February 18, 2010 be modified for C&DLF - Phase V construction and approved by the LQS? Please clarify. Please supply us with any updated or new approval letter. For information, the NC Division of Land Resources was merged into the Division of Energy, Mineral and Land Resource. In the future please update the agency name throughout the permit application.
7. (Facility Plan Drawing Sheet No. SD-1) Facility Compliance Inspection Report dated January 28, 2015 indicates waste management units including white good/scrap metal collection area and scrap tire collection area are operating inside the landfill facility. Please add the waste management units to the drawing Sheet No. SD-1 [Rule 15A NCAC 13B .0537(d)(B)].
8. (Facility Plan Drawing Sheet SD-2) The Legend Field indicates the original C&D footprint of 66.5 acres. This is likely a typographical error. Please clarify.

Section 5 - Engineering Plan

9. (Section 1.1) The section should provide the details of constructing the landfill subgrade for Phase 5, which will be constructed in the existing drainage ditch and sandwiched by the existing inactive landfill cells – Phase/Cells I & II. At a minimum, the section should describe (i) the thickness of the base pad, approximately 5 to 8 feet according to Section 3.3.2.8 of the Facility Plan and (ii) typical details of the proposed earthen pad (subgrade) in the Engineering Plan drawing.
10. Should the existing Erosion and Sediment Control Plan for C&DLF - Phase IV (Cell 4) approved by the NC Land Quality Section (LQS) on February 18, 2010 be modified for C&DLF - Phase V construction and reapproved by the LQS (also see the Erosion Control sequence No. 1 in drawing Sheet No. EP-2)? Please clarify.
11. (Appendix B) Please address the following concerns:
 - i. To avoid any confusion and be consistent with the Facility Plan, the Phase V mentioned in the Appendix B should be noted as the Phase VIII (former Phase V).
 - ii. Since the proposed Phase V is filled in between the existing Cells/Phases I & II, should the soil data collected from subsurface investigation in 1993 be incorporated into the design parameters rather than the data alone collected in former Phase V (proposed Phase VIII) area, which is far more than 1000 feet away from the proposed Phase V area (referring the narratives in Section 7.1.4). Please clarify.
 - iii. (Section 7.6) Please verify the final cover thickness in Section 7.6.3 and revise the slope stability results as needed.
12. (Appendices C & D) The settlement calculations in Appendix C and stability calculations in Appendix D are not related to the proposed Phase V, but to the previous Phase IV/Cell 4. Since the factors impacting on design including soil conditions, load/waste weight & height, and landfill configurations are different between Phase V from Phase IV/Cell 4, please provide the calculations for Phase V design which demonstrates that designs meet requirements stated in Rules 15A NCAC 13B .0540(2)(a) & .0543(c)(3). Additionally, the input and out data for the slope stability analysis should be appended to Appendix D.

Section 6 – CQA Plan

13. (Section 2.1) This section indicates that the County may construct the base pad for the proposed landfill Phases V, VI, VII, and IX. Would the County meet the contractor qualifications stated in the Section 2.1.3 and Table 2-1?

14. (Section 2.3.2) The last sentence, please add the requirements / conditions of landfill subgrade [15A NCAC 13B .0540(5)] and base pad (base grade) [15A NCAC 13B .0540(2)].
15. (Section 3) Please clarify the concerns or provide the requested information below:
 - i. (Section 3.1) Is the specified minimum internal friction angle consistent with that used in the Appendix B - Slope Stability Analysis of the Engineering Plan? Please clarify.
 - ii. The referenced Paragraphs 4.1A, 4.1B, 4.3.1.E, 4.2B, 4.3.1.E, 4.4.1.A, 4.4.1.B are likely typographic errors throughout this Section 3. Please clarify and make necessary changes.
 - iii. (Section 3.3.2.K) Please specify the frequency of testing to confirm the thickness of compacted clay liner.
 - iv. Prior to placing the successive lifts, the surface of the prepared subgrade or the surface of in place CCL lift shall be scarified or otherwise conditioned to eliminate lift interfaces. Please add this requirement to the Section 3.3.2.
 - v. (Section 3.4.1) The specified testing method ASTM D 2992 is not related to a soil density test. Please clarify and make any necessary correction.
 - vi. (Sections 3.4.1.A and 3.4.1.F) Please specify the survey requirements such as the size of the chess-board grid, the points of the topographic changes or slope /grade break points, the surveyor's qualification and credential, etc.
16. (Section 5) Please clarify the concerns or provide the requested information below:
 - i. (The first paragraph) The compacted fill/base pad shall meet the requirements stated in Rules 15A NCAC 13B .0542(2) and .0542(5). Please add the requirements to this section.
 - ii. (Section 5.1) The as-built thickness of the pad is ranging from 5 (outside ditch area) to 8 (inside ditch area) feet according to the Section 3.3.2.8 of the Facility Plan. Please revise the section accordingly.
 - iii. (Section 5.2) Please specify the shear test (ASTM D 4767) frequency for compacted earthen pad to ensure that the minimum passing criterion (internal friction angle of 35 degree) specified in Section 5.1 is achieved.

- iv. (Section 5.3.1) This site has unique conditions. Please add more detail on the subgrade preparations for the Phase V landfill base. Items to consider might include: (a) Installing all required BMPs in the soil disturbance area prior to commencing any construction activities. The temporary or permanent BMPs to prevent or control run-on from adjacent side slopes of existing landfill cells must be properly installed and maintained. (b) Clearing & grubbing of vegetation growing in the intermediate covers of existing Cells / Phases I & II and ditch areas, (d) Dewatering the existing drainage ditch, as needed (Refer to water table elevation at Figure 4-2, Section 4 of the permit application) and removing and disposing of slough, organic, or unsuitable material inside the ditch. This step should be approved by the Engineer. (e) Due to site conditions and the excavation depths, proper safety measures including shoring or bracing may be required. The County must follow all safety rules or regulations issued by federal, state or local governments. Please add the requirements to this section.
- v. The referring Section 6.4.1 in this section is likely a typo. Please clarify.
- vi. Since the thickness of the soil pad is ranging from 5 to 8 feet, the specification in Section 5.3.2.E may create confusion. Please clarify.
- vii. (Section 5.4.1) The specified testing method ASTM D 2992 is not related to soil density testing. The referring method is likely ASTM D 2922. Please clarify.

Section 7 - Operations Plan

- 17. (Section 2.2) The reference of the current Permit to Operate (PTO) is incorrect. The latest PTO for Dare County C&DLF was issued on April 13, 2011 (DIN 13484). Please correct.
- 18. (Section 2.2) Whole scrap tires having whole pneumatic rubber coverings as defined in the North Carolina General Statutes (NCGS) 130A-309.58(b) are prohibited from disposal in a C&DLF but can be recycled at the landfill facility. Please add the clarification to this section.
- 19. (Section 6) Please add cross-reference of Appendix C – Waste Acceptance Program to this section.
- 20. (Section 3.2) Pursuant to NCGS 130A-295.6(h1), the County, is allowed to apply any alternative daily cover material (ACM) at the C&DLF, which is approved by the SWS to be used at a CDLF sanitary landfill in the State of North Carolina. Some requirements must be met prior to applying the ACM. If the County is planning to adopt this

requirement please append the guidance to the Operations Plan. The guidance can be downloaded from the SWS web site at

http://portal.ncdenr.org/c/document_library/get_file?uuid=a6715102-371c-45ee-97ee-0150f5a9b449&groupId=38361.

21. (Section 6.2) Regarding the open burning in the section, in addition to obtaining an approval from the DWM, the County must obtain approvals from the NC Division of Air Quality and a local fire department. The approval documents must be placed in the landfill operating record. Please add the requirements to this section.
22. (Section 6.4) If the County desires, please append the standardized "Fire Occurrence Notification" to the Operations Plan. The form can be downloaded from the SWS web site at http://portal.ncdenr.org/c/document_library/get_file?uuid=18760b57-0f71-464e-b89f-cf4790caa65f&groupId=38361. Additionally the contact phone number is 919-208-0765.
23. (Section 7.2 & Appendix C -Section 5) Pursuant to NCGS 130A-309.25 the facility operator must complete an approved operator training course. Please describe the certified training credentials that the facility personnel hold.
24. (Section 7.7) Please provide the requested info below regarding recyclables:
 - i. The recyclable or recovered material as defined in NCGS 130A-290(24) must be managed according to the requirements stated in NCGS 130A-309.05(c). Please add the requirements to this section.
 - ii. Pursuant to Rule 15A NCAC 13B .0542(b), the non-disposal waste management units including scrap tire collection area and white goods/scrap metal collection area must be added to the operation plan drawing Sheet No. OP-1.
 - iii. The Waste Acceptance Program in Appendix C must be implemented/conducted at the non-disposal waste management units. Any non-conformance wastes must be properly disposed of the on-site C&DLF or on-site MSW Transfer Station (2805T- Transfer) at the conclusion of each working day according to Rule 15A NCAC 13B .0537(b). Please add the requirement to this section.
 - iv. Please describe the procedures to handle & manage the Freon-containing white goods at the facility and the stored Freon (if it is removed by the trained personnel at the landfill facility).

25. (Section 9) The new landfill Phase V is bounded by the inactive landfill Phases / Cells 1 and 2 on the east and west sides. The run-on generated from the adjacent side slopes of Phases / Cells 1 and 2 must be properly diverted away from the working face in the Phase V area. Please describe the approaches and best management practices (BMPs) to properly handle and prevent the run-on from reaching the working face at Phase V. The typical details of the proposed BMPs should be shown the drawings.

Closure & Post-Closure Plan

26. (Section 1.3) According to the data shown on drawing Sheet No. SD-2, the gross capacity of Phases (or Cells) I though IV is 999,200 cubic yards (CY), and Phase V has a gross capacity 478,900 CY. Therefore, total gross capacity of Phases I through V is 1,478,100 CY which is different from the amount of 1,746,400 CY in this section. Please clarify.
27. (Table 1-1) Please address the concerns regarding the closure cost estimates.
- i. Referring toComment No. 2, the closure area (approximate 47.3 acres) for Phase V should include areas combining Phases I, II, & V ($11.3 + 11.3 + 2.1 = 24.7$ Acres) and stand-alone Phases III & IV ($11.3 + 11.3 = 22.6$ acres). Please revise the extent of closure area in the estimate accordingly.
 - ii. Are there reasons to significantly reduce the unit costs for the following cost items related to site closure comparing the same ones in the closure cost estimate in December 2008 (DIN 9831)? The concerned items are: Grade Intermediate Cover/Strip Existing Vegetation, 18-inch thick Erosion Layer, Temporary Erosion Control, Permanent Erosion and Stormwater Control. Should the cost inflation factor for the past five years be considered? Please also note that the estimated costs for the planned closure activities shall be sufficient and adequate amounts to hire a third party (not the County) to complete the required tasks.
 - iii. Is there any reason why the cost item – Indemnification is eliminated? Please clarify.
28. (Section 2.6) The information stated in the last paragraph is out-of-date. Please revise accordingly.
29. (Table 2-1) According to NCGS 130A-295.2(h1), the costs for the PACA shall be at least one million dollars. Please make the necessary correction on the Table 2-1.

Your cooperation in providing the additional information or documents and to clarify the concerns stated above will assist the SWS in making permit decision for your facility in expedite manner.

If you have any questions or requests for further clarification to the comments, please contact me at (919) 707-8251 or ming.chao@ncdenr.gov.

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Chao', with a stylized, cursive script.

Ming-Tai Chao, P.E.
Environmental Engineer
Division of Waste Management, NCDENR

cc:

Ed Mussler, Permitting Branch Supervisor	Mathew F. Colone, P.G., CDM Smith, Inc.
Dennis Shackelford, DWM	Ray Williams, DWM
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